

Ranch Fire Broom Treatment Project EA

Introduction

The Mendocino National Forest is proposing to treat non-native invasive brooms within the area of the 2018 Ranch Fire. There are three species of brooms that will be targeted: Scotch broom (*Cytisus scoparius*), Spanish broom (*Spartium junceum*), and French broom (*Genista monspessulana*). All three species are considered highly invasive in the United States. Infestations of these species are known from 15 sites in the Ranch Fire area, and comprise a total of 54 acres, over 40 acres of which is in one large Scotch broom infestation on the Upper Lake Ranger District.

Project Location

The infestations targeted in this project are throughout the Ranch Fire area, which burned over 410,000 acres total, and about 288,000 acres on the Mendocino National Forest. This area is in Lake, Colusa, and Glenn Counties, and both the Upper Lake and Grindstone Ranger Districts. Several of the sites are also within the boundaries of the Berryessa Snow Mountain National Monument. The largest single infestation is on Sumner Ridge on the Upper Lake Ranger District. There are also sizable infestations near Letts Lake and along the M1 road. See Figure 1 for a map of the known infestations.

Purpose and Need

Brooms are large flowering shrubs in the pea/legume family that are native to the Mediterranean and Europe but are considered highly invasive where they occur outside their native range; this area includes much of North America, Australia, and New Zealand. The three species present on the Mendocino National Forest, Scotch broom (*Cytisus scoparius*), Spanish broom (*Spartium junceum*), and French broom (*Genista monspessulana*), all share bright yellow flowers, small leaves, and flattened pea-pod-type fruits. Brooms were commonly planted both as ornamentals and for erosion control as early as the late 1800s, but Scotch broom was recognized as a problem in California as early as the 1930s (Zouhar 2005). Broom species can form impenetrable thickets that contribute to fire hazard, are not palatable to wildlife, and have long-lived seed banks. Their ability to fix nitrogen improves soil fertility, which gives a competitive edge to other non-native species (DiTomaso and Kyser et al. 2013).

The purpose of this project is to control and, where possible, eradicate invasive broom species in the Ranch Fire area. Most of this treatment work will involve herbicide application on young plants, though mechanical removal of larger adult plants will also likely occur.

The Ranch Fire killed a large majority of adult reproductive broom plants in areas with moderate to high burn severity. However, fire stimulates seed germination in brooms, and a very high density of seedlings was found in these infestations in spring and summer 2019. The Ranch Fire has thus provided a twofold benefit for broom treatment: the fire killed – and removed much of the biomass of – thousands of mature adult plants, and also depleted the seed bank by stimulating germination of seeds that might otherwise have laid dormant for decades. However, herbicide treatment must occur quickly to be effective. Brooms can reach reproductive maturity and begin producing seeds as early as two years old; the seedlings that germinated after the Ranch Fire will already be one year old by spring of 2020, and by summer 2021, these plants will begin to drop new seeds, which will offset the depletion of the seedbank that occurred with the flush of germination in 2019.

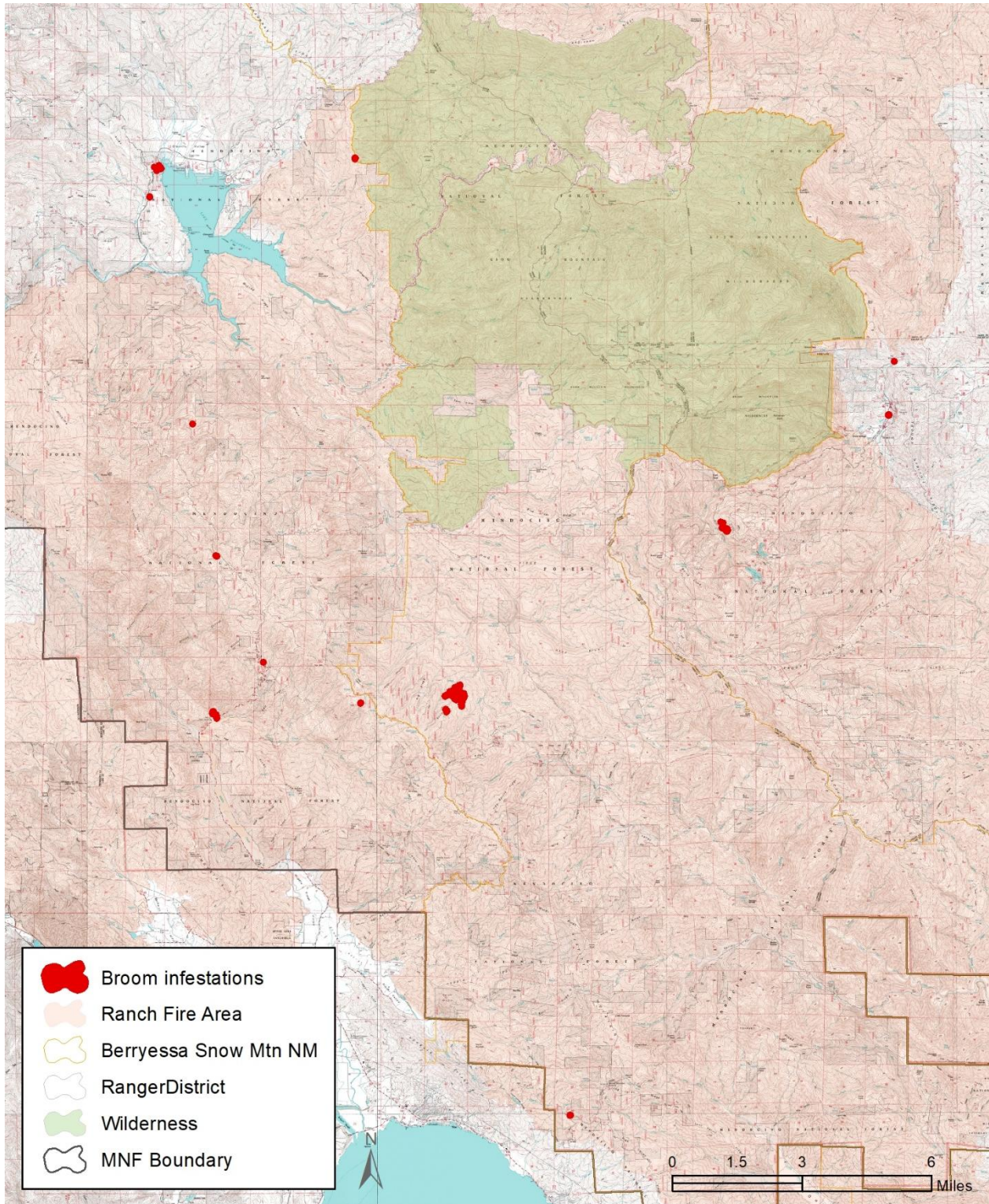
Acting quickly to treat these broom sites will also allow for smaller total quantities of herbicide to be applied to the project area. The quantity of herbicide used in a foliar application is directly proportional to the size of the plants, so treating small seedlings sooner will require much less total herbicide applied to the landscape than treating the large adult plants that will develop later.

Proposed Action

The Mendocino National Forest proposes foliar application of herbicide to the invasive broom species Scotch broom (*Cytisus scoparius*), Spanish broom (*Spartium junceum*), and French broom (*Genista monspessulana*) in the area of the 2018 Ranch Fire. The herbicide application will primarily target the numerous seedlings that germinated after the fire, but remnant adult plants may be treated as well. Foliar applications of herbicide to brooms are most effective during late spring and early summer when the plants are actively growing and there is sufficient soil moisture; treatments would generally occur April to July, depending on weather conditions.

The proposed herbicide application would be a mixture of triclopyr and aminopyralid, along with a methylated seed oil surfactant and a marker dye. All components would be applied at or below the label rates, and the mixture applied with backpack sprayers. No herbicide will be applied within Snow Mountain Wilderness, and no aerial application of herbicide is proposed.

Figure 1. Locations of broom infestations in the Ranch Fire Area. Site boundaries are enlarged for visibility at this map scale.



References

DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp.

Zouhar, Kris. 2005. *Cytisus scoparius*, *C. striatus*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available:

<https://www.fs.fed.us/database/feis/plants/shrub/cytspp/all.html>

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